

SOUTHWEST FISHERIES SCIENCE CENTER
FOURTH QUARTER REPORT-FY 2003
For the period July 1, 2003 through September 30, 2003

Submitted by: Norman Bartoo, Acting Division Director, Fisheries Resources Division

Title of accomplishment or milestone: Automatic Posting of CalCOFI indicator species time series on Web

Current status: Completed

Background information: The Magnuson-Stevens Fisheries and Conservation Management Act, will be amended in 2003 to include provisions for ecosystem-based management of federally managed species. To support these new provisions, indices of ecosystem health are needed that could be used as targets for management. A widely held belief, is that limited perspective of recent fishery observations, has resulted in shifting base lines and a continuing removal of larger apex predators despite grave ecosystem consequences. This process is believed (Jackson et al. 2001) to have resulted in the "collapse of coastal marine ecosystems" and California is cited as an example. A set of ecological indicators is needed for monitoring ecosystem health that provides a quantitative evaluation of ecosystem health that could be used to assess effects of fishing and other regulations affecting the ecosystem. Such a set of indicators must be able to discriminate among anthropogenic changes in ecosystem structure and those resulting from decadal scale changes in ocean climate. Hundreds of species are identified in the CalCOFI surveys annually but about only 20% of these are fished. We believe that it would be possible to develop such a set of indicators for the structure of fish communities by comparing the relative abundances of the fished and unfished components of the ichthyoplankton within the context of shifting climate baselines. Such a set of indicators could provide a family of fish/environmental ecological indicators.

Purpose of activity: The purpose of this activity is to provide a quarterly report of the status of the key indicator species from the CalCOFI samples and post it on the Web.

Description of accomplishment and significant results: We have developed the Web page and are evaluating methods of evaluating the indicator species. We next need to review the list of indicator species to see if we need to add or delete from the list. Then we will develop the graphics for the web page to display the status of the indicator species in the different geographical area of the CalCOFI pattern.

Significance of accomplishment: The chief benefit of these ecological indicators is to provide evidence on a quarterly basis for geographic shifts in the pelagic community, indicative of changes in ocean climate. The focus on the area occupied by the survey but may be meaningful for the coast as a whole when linked to other fish/environmental idiocies. While this information will probably not be used directly in stock assessment models, it will provide, an ocean climate context and a historical framework for judging harvest guidelines.

Problems: None

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